Basic Use of Sony HVR-Z1U

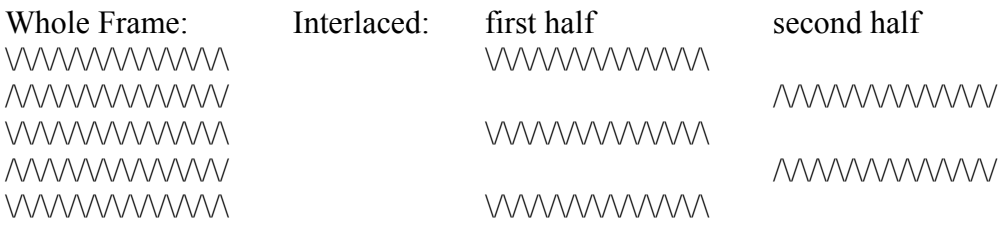
HDV vs DV

Q. What do DV and HDV mean?
A. DV is short for Digital Video. HDV is short for High Definition Video.

Q. What is similar about the two modes?
A. Both DV and HDV record on the same kind of tape for approximately the same amount of time, only HDV uses compression to get a video approximately 4x the size of DV.

Q. What differences are there between the two modes?
A. In DV mode, the camera records an image that is 720 pixels x 480 pixels, while in HDV mode it records an image that is 1440 pixels by 1080 pixels. A tape recorded in DV mode can be played back by any DV device, including all the other cameras and tape decks in the ERC. A tape recorded in HDV mode can only be played back by a device that supports HDV (currently at the ERC only the Sony HVR-Z1U does) and must be edited in Final Cut Pro 5 (Final Cut Pro HD, while supporting High Definition editing, does not support the HDV format; our copy of Adobe Premier likewise does not support the HDV format).

Q. What does 60i mean?
A. 60i refers to the frame rate of the camera. A standard TV essentially displays (and, therefore, a standard camera essentially records) 30 frames per second. However, it does so by "interlacing" the frames. It actually displays a new image 60 times per second, but each image is only half a frame, specifically it is every other line of pixels. Here is an example:



By displaying the two images quickly, it reduces the amount of flicker visible to the human eye while still only requiring 30 frames per second. In DV mode, the camera can be switched to record a whole frame at a time ("progressive scan") so that, when played back through proper equipment, it shows entire frames in one pass at 30 frames per second. HDV mode does not support progressive scan, and can only be used in 60i.
Q. When should I use HDV instead of DV?

A. Whenever you want a larger image, capable of being shown on larger screens without losing clarity. Also, if you are videotaping a large area but wish to still be able to see smaller actions within the whole (a good example would be a play or a dance performance), then HDV is a good choice.

Changing Settings

*Selections marked in BLUE are the default settings. Please restore all settings you change when you are done with the camera

1. Changing the White Balance
   Step 1: Set the AUTO LOCK switch to the center position. [See Image 1]
   Step 2: Push the WHT BAL button. An image of a light bulb will appear if you are in INDOOR mode, an image of the sun will appear if you are in OUTDOOR mode now.

*Note: [OUTDOOR] should be used when:
- You are outside
- For night shots
- At sunset and sunrise
- Under daylight fluorescent lamps (the "cold", slightly bluish-white fluorescent bulbs found in most office buildings, stores, and institutions)

[INDOOR] should be used when:
- You are inside
- There is lots of incandescent lighting (a.k.a. normal bulbs with a filament)
- You are under special studio lights
- You are under "warm white fluorescent bulbs" (a.k.a. fluorescent bulbs that give off light that looks the same as normal bulbs with a filament)

*Note: Switching back from INDOOR does not mean you are in OUTDOOR mode (or vice-versa). You are back in the automatic White Balance mode. You can only switch between the automatic mode and **either** INDOOR **or** OUTDOOR. To change which mode you switch into, see below.

2. Changing the Preset White Balance
   Step 1: Press the MENU button. [See Image 1]
   Step 2: Turn the SEL/PUSH EXEC dial to [CAMERA SET], then push the dial to select
   Step 3: Select [WB PRESET]
   Step 4: Select [OUTDOOR] or [INDOOR]
   Step 5: Press MENU to exit the menu
   Step 6: Set the WHT BAL switch to PRESET [See Image 1]
   Step 7: Press the WHT BAL button [See Image 1]

3. Switching between HD/SD

Step 1: Press the MENU button. [See Image 1]
Step 2: Turn the SEL/PUSH EXEC dial to IN/OUT REC, then push the dail to select
Step 3: Select [REC FORMAT]
Step 4: Select [HDV1080i] or [DV]
Step 5: Press MENU to exit the menu

*Optionally, if you have experience with DVCAM

Step 6: (With [DV] selected) Select [REC MODE] in the IN/OUT REC menu
Step 7: Select [DVCAM] or [DV SP]

4. Switching between Auto Focus and Manual Focus

*Note: Unless you have experience with using focus and have a specific need for manual focus control, you are advised to leave the camera in AUTO

Step 1: Move the FOCUS switch from AUTO to MAN or vice-versa.

To operate the Manual Focus: Turn the front-most ring on the lens casing.
To quickly switch to INFINITY focus: Push the FOCUS switch down to INFINITY, then release.
To have the camera Auto Focus while staying in Manual Focus mode: Push the PUSH AUTO button below the FOCUS switch.

5. Switching between the Internal Microphone and External Microphones

Step 1: Connect an external microphone by plugging the XLR cable into the XLR Input on the camera. If using a single microphone, plug it into INPUT1, if two microphones, plug into both channels.
Step 2: When not recording, press the MENU button [See Image 1]
Step 3: Select the [AUDIO SET] menu by turning the SEL/PUSH EXEC dial, then pressing the dial. [See Image 1]
Step 4: Select [MIC SELECT]
Step 5: Select [XLR]
Step 6: Select [XLR SET]
Step 7: Select [XLR CH SET]
Step 8: Select a channel
CH1: Records INPUT1 to Channel 1 (CH1) and INPUT2 to Channel 2 (CH2
CH1, CH2: Records INPUT1 to both Channel 1 and 2 (CH1 and CH2) and does not record INPUT2 at all.

*Note: The Internal Microphone records in stereo, with the left side being recorded to CH1 and the right side to CH2. External Microphones do not record stereo. They record Mono, to either CH1 or CH2 (or to both CH1 and CH2 in CH1, CH2 mode). To record stereo, 2 external microphones must be used, the

microphone recording to the left of the subject from the camera's point of view being plugged into INPUT1 and the microphone recording to the right of the subject from the camera's perspective plugged into INPUT2 and the [XLR CH SET] set to CH1.

Step 9: Set [INPUT1 LEVEL] and/or [INPUT2 LEVEL].
[MIC]: Use this setting if the thing plugged into [INPUT_] is a microphone
[LINE]: Use this setting if the thing plugged into [INPUT_] is a line from another audio source, such as a CD player, a tape player, or the output of a sound mixing board in a theater or lecture hall.

Step 10: If a microphone is plugged into INPUT1 or INPUT2, phantom power must be turned on for the microphone to work. Flip the MIC: PHANTOM switch for INPUT1 or INPUT2 to [ON] if they have a microphone plugged in or to [OFF] if there is another source or nothing plugged in.

Step 11: To switch back to the Internal Microphone, repeat Steps 2-4, then select [INTERNAL MIC].

Step 12: Press the MENU button to exit.

6. Switching between Automatic and Manual Microphone Levels

Step 1: Set the AUDIO SELECT switch of the channel to be adjusted (CH1 or CH2) to AUTO for automatic level control or MAN for manual level control. [See Image 2]

Step 2: To adjust the levels while in manual mode, turn the AUDIO LEVEL dial of the proper channel (the CH1 dial for channel 1 and the CH2 dial for channel 2). [See Image 2]

*Note: The Internal Microphone is controlled by the CH1 AUDIO SELECT switch and the CH1 AUDIO LEVEL dial.

Exposure(auto, spotlight or manual) - Spotlight and backlight presets are set to the ASSIGN buttons, but I don't know which is set to which until I can see the camera. Otherwise, exposure is adjusted by "adjust[ing] the iris, gain, and shutter speed manually" (from the manual). If anyone is doing these sorts of adjustments, then they know plenty well enough what they are doing and don't need instructions here, which would be long and confusing to people who don't need it.

Setups

*Note: RED denotes something that is not a standard setup. Please, however, check all settings upon receiving camera, as previous patrons may not have reset all the settings to their default.

1. Basic setup

For use with handheld taping or in situations where there is strong lighting, low wind, and close proximity for sound.

This is the camera as-is when you check it out.

Video: HDV – 1080i
White Balance: Outdoor
Exposure: Auto
Mic: Built-in stereo
Mic levels: Auto, no correction for wind
Tripod: Optional usage, strongly recommended though
On-camera light: Optional usage, though encouraged in case of low light levels

2. Lecture setup

For use when videotaping lectures in a lecture environment. This means that there is bright, even lighting, a mostly stationary subject, and external microphones and possibly a sound board from which to get sound output, preferably through XLR cables.

Video: HDV – 1080i
White Balance: Indoor
Exposure: Manual. Preset using the iris dial to ensure that the speaker's face is not over-exposed. Use the zebra striping as an aid.
Mic: External
Mic levels: Auto, no correction for wind
Tripod: Necessary. Should be preset on speaker. Can be either locked down with the camera view wide enough to encompass movements of the speaker or can be manually operated in a close-up with the tripod used to track the speaker and his movements.
On-camera light: Not necessary.

3. Play setup

For use when videotaping college theatrical productions.

*Note: many plays expressly forbid photography or videography of any kind. Check to make sure you are allowed to video.

Video: HDV – 1080i
White Balance: Indoor
Exposure: Spotlight or manual. In manual, the camera operator must keep constant vigil on the iris dial to ensure that actors faces are not over-exposed during bright lighting and are not under-exposed during low. In auto, the camera will attempt to keep the background fully lighted, often causing actors faces to turn completely white. Keeping the iris smaller (the f-stop number higher) will ensure that actors' facial features are visible, though at the possible expense of the stage.
Mic: External. If there is a sound system through which actors are mic-ed, use the sound output from the system into the camera. If there are no mics already, set up your own mics close to the stage, generally at the front near the sides so as to catch all the dialogue.
Mic levels: Auto, no correction for wind, if coming from a soundboard; the levels should all be taken care of. If using your own mics, most likely set on auto, unless there are points of extreme volume, either high or low, in which case manual, with someone monitoring on headphones, would be a better choice.
Tripod: Necessary. Can either be preset to cover the whole stage, or manually operated for close-ups.
On-camera light: Not necessary, potentially disruptive.

4. Outdoor event setup

For use when videotaping events such as Beer Bike that are outdoors, are susceptible to wind, changes in light, and require a mobile camera operator.

White Balance: Outdoor
Exposure: Being outside, subjects and lighting changes quickly. Program the programmable preset buttons to switch quickly between various preset exposure modes.
Mic: Internal, with wind correction on, for most circumstances. External if using an interview mic, a wireless body mic, or a shotgun mic for recording sound from a distance.
Mic levels: Auto. The camera operator should concentrate on the picture first and foremost. If professional audio quality is required, a separate sound operator should be used to take care of the microphone, external recording device, and levels.
Tripod: Unnecessary for the most part. Useful for doing wide shots, panning shots, or instances where a steady, stationary camera is necessary. Otherwise, it is heavy and cumbersome and can make the cameraman's job even harder.
On-camera light: Optional usage, though encouraged in case of low light levels, such as morning/evening, building shadows, and night-time.

5. Sports event setup

For use when videotaping events such as a football or soccer game or a track meet.

White Balance: Outdoor
Exposure: Default
Mic: External shotgun mic
Mic levels: Auto
Tripod: Necessary
On-camera light: Not necessary, potentially disruptive.

Important Tips:

1. Ensure that "Date Record" (in the "Others" menu) is OFF. If it is ON, then the date and time will be recorded over a large portion of the bottom half of your image. This is IRREVERSIBLE. There is no way to get rid of the date and show the video that should be underneath.

IMAGE 1

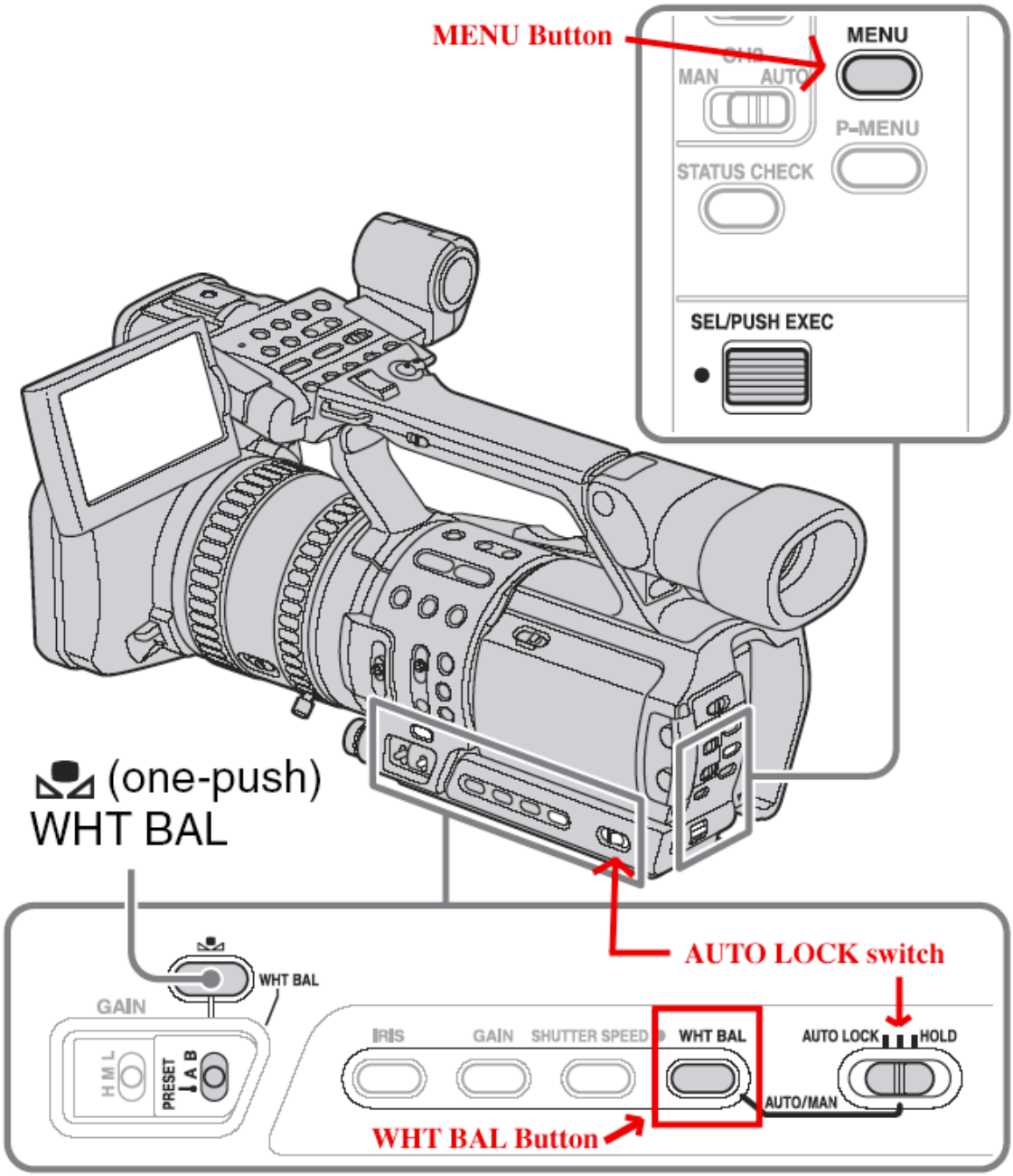
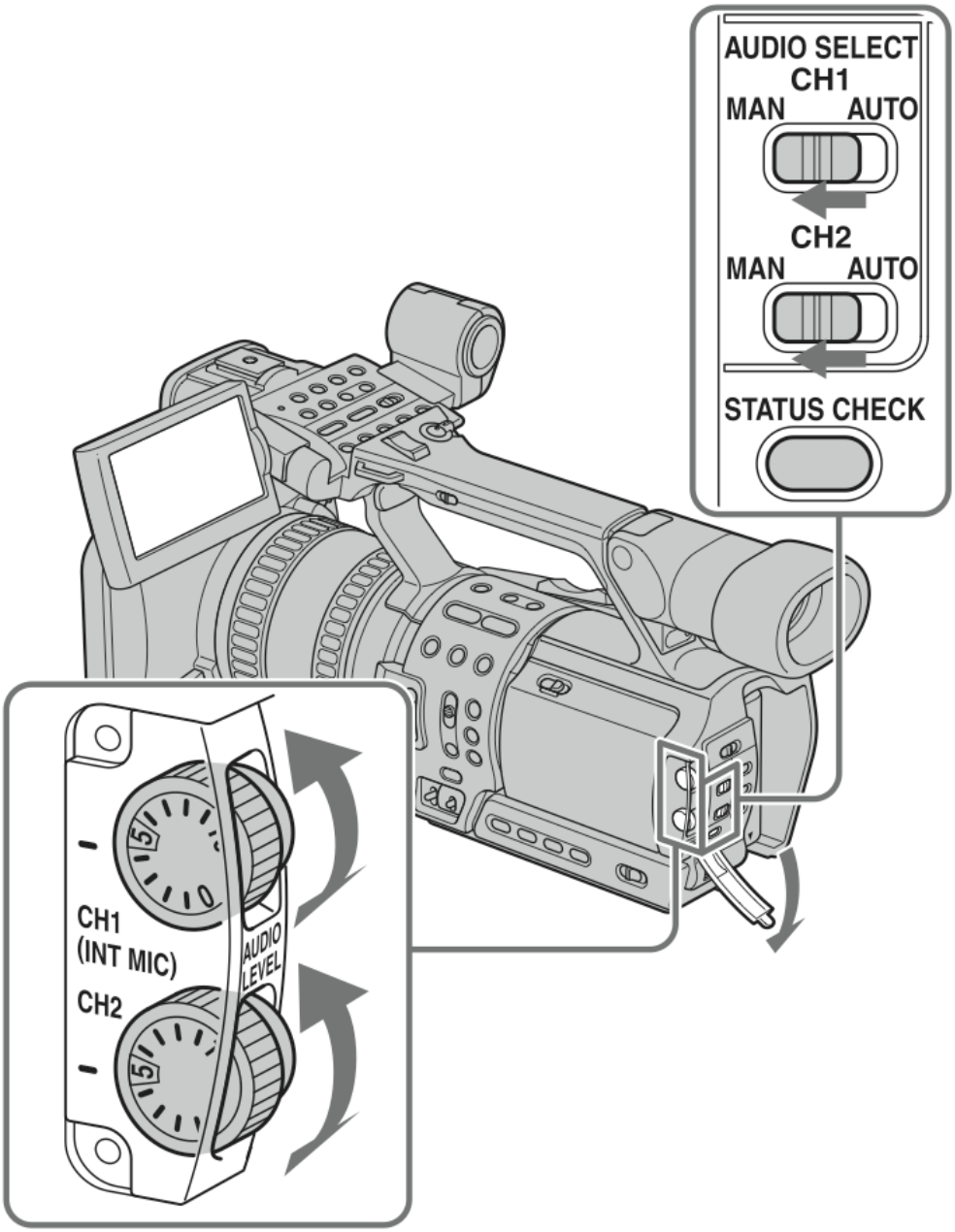

MENU Button
MENU
MAN
AUTO
P-MENU
STATUS CHECK
SEL/PUSH EXEC
(one-push)
WHT BAL
AUTO LOCK switch
WHT BAL
GAIN
H M L
PRESET
A B
IRIS
GAIN
SHUTTER SPEED
WHT BAL
AUTO LOCK
HOLD
AUTO/MAN
WHT BAL Button

IMAGE 2


AUDIO SELECT
CH1
MAN
AUTO
CH2
MAN
AUTO
STATUS CHECK
CH1
(INT MIC)
CH2
AUDIO LEVEL